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MASSACHUSETTS
TECHNOLOGY
DEVELOPMENT
CORPORATION
ANNUAL REPORT 1982



Ikier Technology, Inc. employee testing a section of the company's advanced scientific/engineering workstation.

THE PURPOSE OF MTDC

The Massachusetts Technology Development Corporation is an independent public agency which provides venture capital financing to early-stage, high-risk technology-based companies in Massachusetts.

The purpose of MTDC is to provide a source of capital to new and expanding technological enterprises which have the capacity to generate significant employment growth and other public benefits but which have been unable to secure from conventional sources sufficient affordable capital to fund such expansion adequately.

MTDC was chartered by act of the state legislature in late 1978 and began operating its first investment fund in March 1979. The capitalization of MTDC's investment funds is provided in part by the Commonwealth of Massachusetts, in part by the U.S. Department of Commerce, and in part by earnings on the investments in the portfolio.

MTDC is an independent corporation whose operations are supervised by an eleven person Board of Directors, composed of six individuals from the private sector, two individuals from the university community, and three senior public officials. The organization is a public instrumentality and is not a for-profit corporation.



GOVERNMENT DOCUMENT
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REPORT OF THE CHAIRMAN AND PRESIDENT

MTDC's third full year of operation drew to a successful close on June 30, 1982. The year was marked by a number of important accomplishments whose positive effects are already being felt in the critically important high technology sector of the Massachusetts business environment.

Our most satisfying accomplishment was the successful inauguration of a new capital fund for start-up companies. Called the Corporations for Innovation Development (CID) Fund, it is devoted exclusively to the financing of start-up companies in Massachusetts. It was capitalized initially with \$2,000,000 at the beginning of the year as a joint venture of the state and federal governments. It proved to address such a widespread need that the Commonwealth contributed another \$750,000 to it before the year ended.

Using the CID Fund, we were able to assist in the launching of some new companies in future-oriented industries that are not well-represented in Massachusetts yet—robotics, infrared heat technology and process plant simulation are examples. We were also able to assist in the start-up and expansion of some high technology companies in areas of the state that will benefit most from the new employment generated—companies located in places like downtown Lowell, the Inman Square section of Cambridge and the city of Newburyport.



Marvin G. Schorr and William F. Aikman

Since its inception, MTDC has been a leading participant in more than \$20,000,000 of venture financings for innovative young companies. Combining the figures for our start-up CID Fund with those for our earlier fund targeted to early stage expansions, MTDC had invested \$2,950,000 in portfolio companies at year end. The MTDC investments leveraged a total of \$17,804,000 in investments by conventional private sector sources in the same companies.

For most of the companies in our portfolio, MTDC acted as the lead investor and issued its financing commitment prior to that of the private sector sources. Aggregating the financings of all the companies funded since the beginning of MTDC's program, every dollar of MTDC investment leveraged \$6.04 of new private sector investment. In most cases, this private investment was made in companies which had little or no success in securing capital before obtaining MTDC's commitment.

Another accomplishment we take pride in is the successful beginning of a program to package financings for small technology-based companies—without investing any MTDC funds. Consistent with our mandate to avoid scrupulously any displacement of readily available private funds, we do not finance companies which we believe can secure all the capital they need from private sources. However, in 1982 we began a modest effort to help entrepreneurs package their proposals for presentation to venture capitalists and bankers. The result of this effort was that \$2,650,000 in private funds was raised by companies we assisted but did not invest in ourselves.

Our management assistance program grew to new heights of activity. Under this program, we provide financial counsel and advice on business plan preparation to young companies not yet ready to apply for venture financing as well as to entrepreneurs who are forming companies. During 1982 we provided management assistance to 144 companies. As a group, the assisted companies were involved in every aspect of technology and were located in every part of the state.

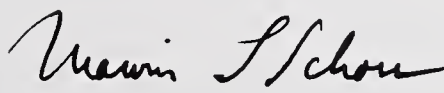
The focus of the MTDC program is on growing new companies which will contribute to the future economic welfare of the state. One of the principal ways companies make that contribution is through generating new employment. In the aggregate, our portfolio companies estimate they will create directly almost 1900 new jobs. The number of additional jobs created in Massachusetts indirectly as a result of portfolio companies' growth is estimated to be approximately 2800. Hundreds of thousands of dollars of additional tax

revenues were paid to the Commonwealth during the last fiscal year by these companies. Several of our companies continue to make another contribution to the state's economic health by operating training programs which result in the hiring of people formerly on public assistance programs.

MTDC continued to benefit from the wide experience and thoughtful advice of a distinguished Board of Directors. At year's end, Warren S. Berg, our Secretary-Treasurer and a former Director, resigned his post. Board and staff alike will miss his counsel. Orie L. Dudley, Jr., a Director since 1980, accepted the additional responsibilities of Secretary-Treasurer in June.

It has become widely recognized that the health of our state's economy is in large measure dependent on small business and on technologically-based small business in particular. MTDC will be working hard in 1983 to assure that many more such businesses start and grow in Massachusetts.

October 1, 1982



Marvin G. Schorr
Chairman



William F. Aikman
President



1982 INVESTMENTS

VITRONICS CORPORATION

Vitronics Corporation has developed an industrial infrared technology with a wide variety of applications in manufacturing processes which require the use of heat. Vitronics, which is located in a century-old mill in historic Newburyport, is engaged in manufacturing infrared conveyorized ovens and furnaces based on a new technology developed by Edward J. Furtek and George Soderberg, the company's founders.

The company's first product, the Infrared Conveyorized Solder Reflow System, is especially useful in the production of microelectronic products. The system can be tailored to fit a variety of needs for low, medium and high production soldering with emphasis on specific applications involving semiconductors, glass/epoxy circuits and printed circuit boards. The Vitronics system is unique in that it requires a very low energy input while producing a maximum operating temperature output of 900°F. The machine also offers exceptionally high levels of temperature control capability. Both of these features have been longstanding major concerns for manufacturers in a variety of industries.

Recognizing the market potential of a system that touches nearly every major manufacturing discipline, MTDC began working with Vitronics shortly after our management assistance program got underway. Once the company was fully prepared to seek institutional financing, MTDC provided guidance on possible sources of funding. Early responses to these efforts convinced us that the company was a good candidate to move from the ranks of our management assistance companies to our investment portfolio. By year's end we had issued a commitment of \$100,000 to Vitronics which the company was using in its efforts to attract an additional \$300,000 in conventional private financing.

ASPEN TECHNOLOGY, INC.

Aspen Technology, Inc., a very innovative software system database company, was the first enterprise to receive financing from MTDC's Corporations for Innovation Development Fund. The company, located in Cambridge in close proximity to the Massachusetts Institute of Technology, was formed to commercialize a



Aspen Technology's President, Dr. Lawrence B. Evans, inspecting new data for the company's ASPEN PLUS system

computer-based system for process plant design known as ASPEN PLUS. ASPEN, which is an acronym for Advanced System for Process Engineering, was conceived by a team of chemical engineers from MIT.

ASPEN PLUS is an extremely large computer software program for steady-state simulation and economic evaluation of various process plants such as chemical plants, petroleum refineries and mineral processing plants. Commercial use of the computer-aided process design system is intended to greatly enhance the productivity of engineers as well as the capacity of a plant to produce significant energy savings.

MTDC's commitment of \$150,000 to Aspen attracted an additional \$400,000 from a syndicate of sophisticated private individual investors. This type of first-stage commitment clearly illustrates how MTDC's CID Fund can provide the financial mechanism which serves as a catalyst in helping to get high technology start-up companies off the ground.

SKY COMPUTERS, INC.

Located in a 19th Century woolen mill in the rehabilitated downtown section of Lowell, SKY Computers, Inc. was formed in May of 1980. The company's initial products focus on enhancing the usefulness of microcomputers and personal computers with a series of high-speed digital arithmetic processing peripherals. The company's first product is an Array Processor Module called the SKY Micro Number Cruncher or SKYMNK. SKYMNK increases the numerical processing speed of a microcomputer by a factor of 25 to 100 times, depending on the application.



Visiting technicians from a foreign industrial customer testing one of SKY Computers' products

SKYMNK-powered microcomputer systems can be used in a wide range of signal analysis applications involving sophisticated arithmetic calculations on a large collection of data. Typical applications include medical image processing, flight simulation, seismic analysis, computer-aided design and manufacturing (CAD/CAM), electrical power network control systems, weather modeling and forecasting, and real time signal analysis systems such as sonar or radar interpretation.

MTDC's investment of \$250,000 in SKY Computers was made as part of a successful effort by the company to raise \$1,350,000. The other investors in the company included Allen & Company, Inc. of New York, the Wood River Capital Corp. and several sophisticated private investors.

PROCONICS INTERNATIONAL, INC.

The growing American interest in robotics is based in the belief that robotics, along with other new automation technologies, will be an important tool for improving the competitiveness of U.S. manufacturing in a variety of basic industries. Intent on meeting this challenge, Richard F. Foulke, founder and President of Proconics International, has applied robotics to the needs of the U.S. semiconductor industry in an attempt to play a key role in maintaining the industry's technological and price advantages at a time when they are under grave attack.

The Woburn-based start-up enterprise was formed in September of 1981 to develop, manufacture and market a highly refined "Silicon Wafer Transfer System" for use in the manufacture of semiconductor devices. The Wafer Transfer System is a fully-automated robotic arm coupled with a microprocessor brain which contains elaborate pre-programmed instructions. The device is designed to allow silicon wafers to be transferred during various stages of semiconductor manufacturing operations without scratching the wafers or incurring any other contamination. The system results in significantly improved yield, quality and productivity.

In anticipation of a significant market opportunity for Proconics' revolutionary product, MTDC invested \$150,000 in the company. Proconics was able to use the MTDC funds to leverage nearly half a million dollars in additional financing from the Berkeley Glasslab Corporation of California and a group of private investors.

Proconics' President, Richard F. Foulke, displaying the company's Wafer Transfer System at a Boston trade show





CGX CORPORATION

MITDC played a key role in bringing CGX Corporation to Acton, Massachusetts, even though two of its three founders were residents of states in other parts of the country and even though most of the company's financing came from sources outside Massachusetts.

The company, which was formed in September 1981, has developed IBM-compatible interactive computer graphics display terminals and systems to be used in computer-aided design and manufacturing (CAD/CAM). The initial product, the CGX 2001, is aimed at "Fortune 1000" manufacturers and other high end users of CAD/CAM. The CGX graphics station serves as the display conduit between the human operator and the IBM mainframe. CGX's systems are designed to enable sophisticated IBM/CADAM users to realize substantial increases in productivity by enhancing the efficiency of designers, draftsmen and engineers.

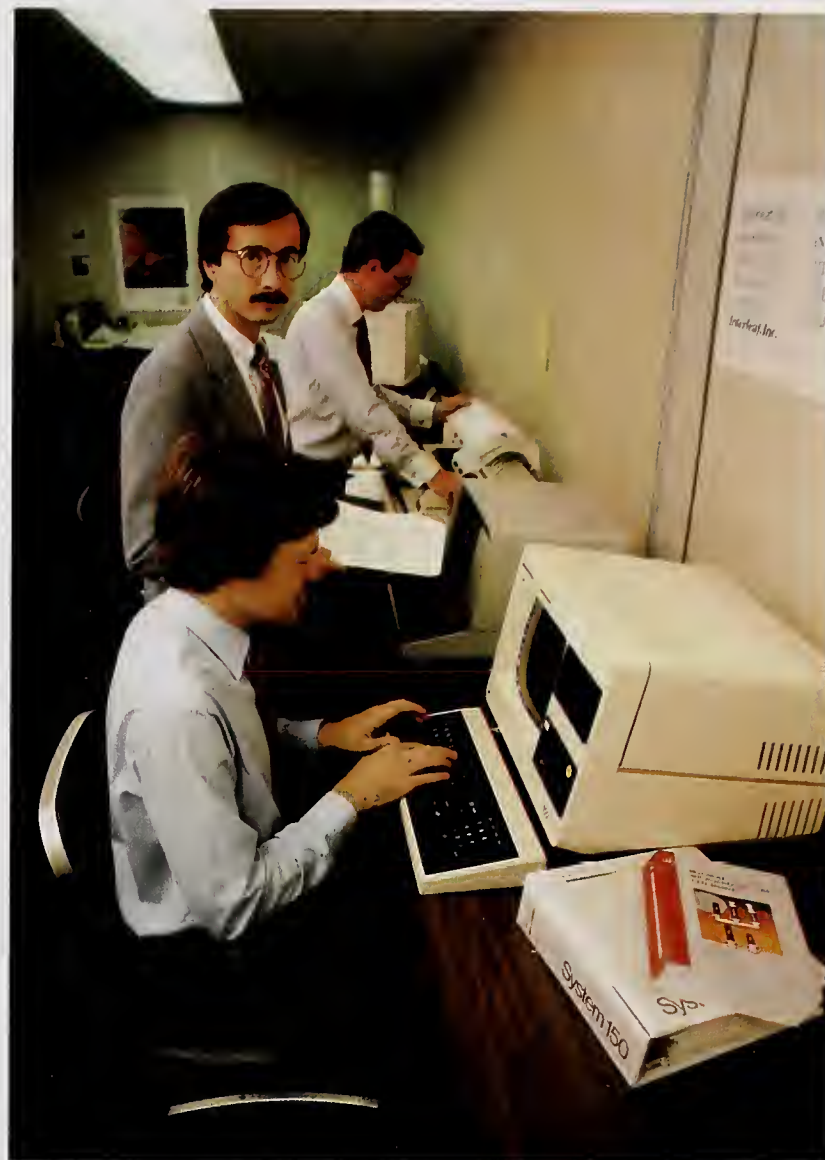
MITDC assumed the lead posture in financing CGX with an early commitment of \$250,000. The MITDC commitment helped the company lure a number of major private institutional investors including Bessemer Venture Partners, Memorial Drive Trust, Fairfield Venture Fund, General Electric Venture Capital Corporation and Sierra Ventures.

MITDC's participation ultimately led to a financing package of approximately \$1.7 million for CGX Corporation with 85% of the leveraged capital coming from private sources outside Massachusetts.

INTERLEAF, INC.

Domestic spending for advanced office equipment is expected to swell from nearly \$3 billion in 1981 to more than \$12 billion in 1986. Three entrepreneurs, David Boucher, Harry George and Allen Andersson, recognized the potential for rapid growth in both the word processing and business graphics segments of this market. Mr. Boucher and Mr. George had worked together previously as founders of Kurzweil Computer Products, Inc., now a subsidiary of Xerox Corporation. Mr. Andersson was a principal in the development of a number of major software packages including one now being used by the U.S. Supreme Court.

Located in the Inman Square section of Cambridge, the company was formed in May 1981 to design, manufacture and market an advanced



Allen Andersson, David Boucher and Harry George at work developing Interleaf's stand-alone document production tool

stand-alone microprocessor-based document production tool. The Interleaf machine is designed for complex applications which require integration of business graphics, advanced word processing and multiple typefont printing. Demand for the product is expected to intersect the present markets for word processing and business graphics. The Interleaf machine will give customers the unique ability to compose, edit and print documents containing both text and high quality graphics.

When the entrepreneurs came to MITDC their company was at an embryonic stage of its development, and they were having difficulty attracting the capital necessary to launch the venture. MITDC worked with them to tailor a package that could effectively underwrite the start-up of the Company. The result was a \$300,000 investment which is the largest single investment MITDC has made. Interleaf is now using these funds to bring its state-of-the-art technology to prototype and to secure additional capital in the private sector.



Publishing Technology's President, Michael Pogodzinski, explaining his company's product during its installation

PUBLISHING TECHNOLOGY CORPORATION

Publishing Technology Corporation is a start-up company formed in March 1981 by Mr. Michael Pogodzinski, who is the original publisher and editor of *New England Outdoors* magazine. Publishing Technology has developed a unique microprocessor database system specifically targeted to solve the list maintenance problems of companies whose businesses involve repeated mass mailings and highly volatile mailing lists.

The company's Zebra system is the first such product to be marketed specifically as a "publisher's

computer system." Expensive and inefficient list maintenance methods coupled with constantly changing U.S. Postal regulations have long plagued the publishing industry. Publishing Technology possesses a unique combination of extensive knowledge of software design as well as deep experience in list maintenance problems. The Zebra is a user-friendly, stand-alone turnkey system which is equipped with a full menu of capabilities, including multiple terminal hook-up capacity, full list maintenance functions, complete U.S. Postal Service compliance and a high speed printer for label production.

MTDC's \$150,000 commitment to Publishing Technology provided the financial base from which it made its first sales. The company is already planning to move into larger quarters in Boston in the near future.

IKIER TECHNOLOGY, INC.

The combination of intensified national emphasis on productivity and the rapidly rising expectations of computer users has produced predictions of explosive growth in the demand for business graphics products. In this environment, Ikier Technology, which was formed in 1981, has already scored some notable achievements. The company initially began operations in the founder's garage, but rapid market acceptance of its product has already mandated that it relocate to a large industrial park in Bedford.

Mr. Hans Ikier epitomizes the high technology entrepreneur. He was the founder and former President of Lexidata Corporation, which grew to be a leader in high quality display processors for satellite imaging, medical imaging and the CAD/CAM industry. Later he engineered an advanced scientific/engineering workstation with very sophisticated graphics capabilities which is a significant innovation in the field of display processing. With that product designed, he launched Ikier Technology, Inc. to manufacture and market it internationally.

The Ikier workstation offers a technologically-advanced raster scan graphics display. Commercial sales of the workstation are targeted at technically self-sufficient, engineering-oriented graphics users who require high resolution and high computing power.

After concluding that Ikier Technology had carved out a unique position in a rapidly expanding market, MTDC provided \$150,000 of start-up capital. MTDC's commitment helped the company secure an additional \$980,000 of private funds in two financings with the major portion coming from Claflin Capital Management Corporation.



PREVIOUS INVESTMENTS



The diameter of one of Crystal Systems' largest optical sapphires being measured by a caliper

CRYSTAL SYSTEMS, INC.

Cystal Systems, which has developed and patented an advanced crystal growth technology called the Heat Exchanger Method (HEM), has used its technology to produce the world's purest synthetic sapphire. The company sells its sapphire crystal to the optical, defense and electronic industries. MTDC and the Massachusetts Capital Resource Company invested a total of \$750,000 in the company. This investment by two recognized institutional investors greatly increased the company's credibility in the marketplace and helped the company to secure several large new contracts which will enable it to apply its patented crystal growth technology to other markets.

ICON CORPORATION

Icon Corporation is a manufacturer of sophisticated digital electronic devices for use in the computer-controlled incremental motion systems business. Typical applications for Icon's systems include automatic pin and component insertion for printed circuit boards, glue and epoxy dispensers and the positioning of medical diagnostic equipment. The company had sales of almost \$2 million in 1981, but the severe decline that occurred in the capital goods sector of the domestic economy has had an adverse impact on the company's sales for this year. Until the capital goods sector rebounds, Icon expects to see slower growth than had been anticipated previously.

DISPLAY COMPONENTS, INC.

Discom, a manufacturer of precision deflection yokes used by major computer manufacturers in video displays, was hurt by the recession that hit most U.S. computer manufacturers last year. The company reports a recent return to a more profitable posture and it anticipates a good year in 1982. The new facility the company moved into in September of 1981 has increased the company's productivity substantially. Discom occupies a unique place in MTDC's portfolio in that it has been the beneficiary of financing under three of the Commonwealth's alternative financing programs. Joining MTDC in assisting the company are the Massachusetts Industrial Finance Agency (MIFA) and the Massachusetts Business Development Corporation (MBDC).



Discom technicians executing quality control tests

PACER SYSTEMS, INC.

In 1981 Pacer's revenues rose to almost \$8 million, which was a 32% increase over the previous year. In addition to its systems engineering professional consulting services, Pacer has begun marketing hardware products for the aviation industry and two of those products (an omni-directional air data systems package and a series of intermediate-sized flight simulators) are expected to become major factors in the commercial marketplace. In addition, Pacer is expected to benefit substantially from anticipated increases in national defense expenditures.



Under subcontract from Rockwell Collins, PACER's OADS systems will soon be carried on U.S. Coast Guard helicopters manufactured by Aerospatiale

SOLENERGY CORPORATION

Solenergy, a manufacturer of photovoltaic cells and modules for a variety of applications, had a 100% increase in sales in 1981 and is looking forward to continued expansion in 1982. Solenergy has become a significant factor in the remote, low power market and is currently planning to expand its marketing efforts to some rapidly developing foreign markets.

SPIRE CORPORATION

Spire Corporation is in the process of completing development work on a new line of photovoltaic manufacturing equipment which is expected to add significantly to the company's sales over the next five years. The company has been a major participant in the government-sponsored solar energy R&D program and cut-backs in that program have had a short-term impact on sales. Fortunately, when the company applied to MTDC for an investment in 1979, it was already gearing up to convert from a government contract oriented operation to a fully-commercialized company. Since the steps to effect that change were begun before the government cut-backs in solar programs, the company suffered only a slight decline in its anticipated progress. The company believes that once the current shake-out in the solar energy industry is completed it will be in a strong position with its new photovoltaic manufacturing equipment.



Xylogics' new line of Storage Cell mass storage subsystems

XYLOGICS, INC.

Xylogics has become a leader in the design, manufacture and marketing of highly intelligent emulating peripheral processors, disc and tape storage systems. The company moved into new expanded headquarters during the past year. Since MTDC's original investment of \$250,000 in Xylogics, the company has raised \$2,480,000 in new equity through several financings. The company credits the original MTDC investment for providing the base from which it was able to secure private capital of this magnitude. Xylogics' success provides the clearest illustration of the type of financial leveraging that can occur under the MTDC program.

AUDITORS' OPINION

Massachusetts Technology Development Corporation:

We have examined the balance sheets of Massachusetts Technology Development Corporation as of June 30, 1982 and 1981 and the related statements of revenues, expenditures, and changes in fund balances for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying financial statements present fairly the financial position of the Corporation at June 30, 1982 and 1981 and its revenues, expenditures, and changes in fund balances for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

August 20, 1982

Deloitte Haskins & Sells

FINANCIAL STATEMENTS

BALANCE SHEETS, JUNE 30, 1982 AND 1981

ASSETS	NOTES	<u>1982</u>	<u>1981</u>
GENERAL SUPPORT:			
Cash and cash equivalents		\$ 157,871	\$ 69,296
Interest receivable		17,347	6,700
Grant receivable			4,000
Prepaid expenses and deposits		6,106	3,249
Leasehold improvements and office equipment – at cost less accumulated depreciation and amortization of \$4,462 in 1982 and \$972 in 1981	2	31,695	9,581
Restricted cash and cash equivalents	5	93,000	
Total general support		<u>306,019</u>	<u>92,826</u>
RESTRICTED FOR INVESTMENT PROGRAMS:	2,3		
Cash and cash equivalents		1,148,557	4,167
Unexpended grants – letters of credit		1,122,000	672,000
Grants receivable	3	750,000	2,000,000
Investments	2,3	1,701,443	1,295,833
Total restricted		<u>4,722,000</u>	<u>3,972,000</u>
TOTAL ASSETS		<u>\$5,028,019</u>	<u>\$4,064,826</u>
LIABILITIES AND FUND BALANCES			
GENERAL SUPPORT:			
Accrued liabilities		\$ 14,172	\$ 7,067
Capitalized lease payable		1,901	3,549
Fund balance	7	289,946	82,210
Total general support		<u>306,019</u>	<u>92,826</u>
RESTRICTED FOR INVESTMENT PROGRAMS – Fund balances	3	<u>4,722,000</u>	<u>3,972,000</u>
TOTAL LIABILITIES AND FUND BALANCES		<u>\$5,028,019</u>	<u>\$4,064,826</u>

See notes to financial statements.

STATEMENTS OF REVENUES, EXPENDITURES,
AND CHANGES IN FUND BALANCES
FOR THE YEARS ENDED JUNE 30, 1982 AND 1981

	NOTES	1982		1981	
		GENERAL SUPPORT	RESTRICTED FUNDS	GENERAL SUPPORT	RESTRICTED FUNDS
REVENUES:					
Appropriation – Commonwealth of Massachusetts	7	\$190,000		\$190,000	
Grants:					
U.S. Department of Commerce	3				\$1,000,000
Commonwealth of Massachusetts	3		\$ 750,000		1,000,000
Gain on equity investment	2	15,000			
Interest earned	2	325,053		125,508	
Miscellaneous		1,338		1,571	
Total revenues		<u>531,391</u>	<u>750,000</u>	<u>317,079</u>	<u>2,000,000</u>
EXPENDITURES –					
General support	4	<u>323,655</u>		<u>284,947</u>	
EXCESS OF REVENUES OVER EXPENDITURES		207,736	750,000	32,132	2,000,000
FUND BALANCES, BEGINNING OF YEAR		<u>82,210</u>	<u>3,972,000</u>	<u>50,078</u>	<u>1,972,000</u>
FUND BALANCES, END OF YEAR		<u>\$289,946</u>	<u>\$4,722,000</u>	<u>\$ 82,210</u>	<u>\$3,972,000</u>

See notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

1. ORGANIZATION AND OPERATIONS

The Corporation came into existence on October 19, 1978 pursuant to Chapter 497 of the Acts of 1978 of the Commonwealth of Massachusetts. The purpose of the Corporation is to provide financial and other assistance to innovative enterprises in Massachusetts that have the potential to expand and generate new jobs and tax revenues. The Corporation is governed by a Board of Directors consisting of eleven members, eight of whom are appointed by the Governor from the private sector and three of whom are public officials.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Amortization and Depreciation

Leasehold improvements are stated at cost and are being amortized on a straight-line basis over five years. Office equipment is stated at cost and is being depreciated on a straight-line basis over estimated useful lives ranging from three to ten years.

Investments

Investments, which at June 30, 1982 consisted of notes receivable and investments in capital stock and which at June 30, 1981 consisted of notes receivable (Note 3), are carried at cost. Interest earned is credited to the Corporation's General Support Funds. Gains on investments are credited to the Corporation's General Support Funds and losses, if any, will be charged against Restricted Fund Balances. Repayments of principal and proceeds from the sale of equity investments (to the extent of the cost basis) remain in restricted funds for investment programs.

Income Taxes

The Corporation is an instrumentality of the Commonwealth and, as such, is not required to pay any federal or state income taxes.

3. INVESTMENT PROGRAMS

Sources of Funds

The Corporation's original investment funds were provided in 1979 by a \$2,000,000 grant (including \$28,000 in start-up costs) from the Economic Development Administration (EDA), U.S. Department of Commerce. Under this grant, the Corporation makes loans from a Revolving Loan Fund to eligible borrowers, defined as Massachusetts-based businesses with operations involving a significant amount of technology, which are located in EDA Title IV redevelopment areas and which meet the requirements of the Corporation's enabling act.

During the year ended June 30, 1981, the Corporation was awarded a \$1,000,000 grant under the Corporations for Innovation Development (CID) program of the U.S. Department of Commerce. The grant award is for the purpose of establishing another revolving loan fund to assist in the creation and development of small, innovative high-technology companies in Massachusetts. In addition, the Commonwealth of Massachusetts appropriated \$1,000,000 to the Corporation as matching funds for the federal grant. The Commonwealth appropriation is restricted to a revolving equity investment fund.

During the year ended June 30, 1982, the Commonwealth of Massachusetts appropriated an additional \$750,000 to augment the Corporation's investment fund.

Investments

During the year ended June 30, 1982, the Corporation made capital investments in an aggregate amount of \$125,000. Investments in the capital stock of companies include certain put and call provisions. During the years ended June 30, 1982 and 1981, the Corporation made loans in aggregate amounts of \$450,000 and \$350,000, respectively. The terms of each note include an equity participation feature such as warrants to purchase common stock or royalties on gross sales or on net profits as well as interest due monthly at rates varying from 14% to 17% per year. Repayment of principal is due in monthly instalments ranging from thirty-three months to sixty months commencing nine months to twenty-four months from the date of the loan. However, such principal payments are subordinated to the payment of certain senior debt of the borrowers.

A summary of cumulative individual grant investment activity as of June 30, 1982 is as follows:

	Notes Receivable	Equity Investments	Total Investments June 30, 1982
EDA Revolving Fund	\$1,376,443	\$ -0-	\$1,376,443
CID Revolving Fund	200,000	125,000	325,000
TOTAL	<u>\$1,576,443</u>	<u>\$125,000</u>	<u>\$1,701,443</u>

All funds invested at June 30, 1981 were from the EDA Revolving Loan Fund and were invested in notes receivable. As of June 30, 1982, the Corporation's Board of Directors had voted approval of additional loans and capital investments in eligible companies in aggregate amounts of \$625,000 and \$550,000, respectively.

4. GENERAL SUPPORT EXPENDITURES

The Corporation's General Support Expenditures for the years ended June 30, 1982 and 1981 were as follows:

	1982	1981
Personnel costs	\$214,243	\$199,822
Professional expenses	26,766	23,069
Occupancy costs	33,728	25,918
Office services and supplies	23,429	19,124
Travel, meetings and conferences	12,559	7,924
Publications and advertising	11,371	8,048
Miscellaneous	1,559	1,042
Total expenditures	<u>\$323,655</u>	<u>\$284,947</u>

5. RESTRICTED CASH — GENERAL SUPPORT

During the year ended June 30, 1982, the Board of Directors voted to restrict a total of \$93,000 of General Support funds for certain investment related activities.

6. OFFICE FACILITY LEASE

The Corporation has lease commitments primarily for office space during the next three fiscal years approximating \$39,600 per year with a two-year renewal option. Rental expense for the years ended June 30, 1982 and 1981 aggregated \$28,000 and \$23,000, respectively.

7. GENERAL SUPPORT FUNDING

The Corporation is successor to the Massachusetts Science and Technology Foundation (which was simultaneously dissolved) and assumed all rights, assets and liabilities of the Foundation. Appropriations from the Commonwealth have been a significant source of funding for both the Corporation and its predecessor. The appropriation acts impose an obligation to reimburse the Commonwealth for amounts appropriated; however, in 1972, the Massachusetts Attorney General issued an opinion that "such continued funding by the Commonwealth suggests that the Legislature is mindful that the Foundation requires state support until such time as it is able to be self-supporting." Accordingly, the liability to the Commonwealth, if any, is not included in the accompanying financial statements. Appropriations through the year ended June 30, 1982 total \$1,830,110, including \$190,000 for each of the years ended June 30, 1982 and 1981.

BOARD OF DIRECTORS



Seated around the table starting on the left are: David M. Thomas, Esq., designee for Honorable David M. Bartley; Dr. Judith H. Obermayer; Orie L. Dudley, Jr.; Joseph S. Iandiorio, Esq.; Arthur M. Vash; William F. Aikman, President (standing); Dr. Marvin G. Schorr, Chairman; Richard H. Demers, designee for Honorable George S. Kariotis; Joe B. Wyatt; Dr. John R. Ehrenfeld; Dr. Robert C. Seamans, Jr.; and Peter K. Wirth, Esq., legal counsel.

Dr. Marvin G. Schorr
Chairman of the Board
Chairman and President, Tech/Ops, Inc.

Joe B. Wyatt
Vice Chairman of the Board
Vice President for Administration
Harvard University

Orie L. Dudley, Jr.
Vice President
The Omega Fund
Endowment Management &
Research Corporation

Dr. John R. Ehrenfeld
Senior Consultant
Arthur D. Little, Inc.

Honorable David M. Bartley
Secretary of Administration
and Finance

Joseph S. Iandiorio, Esquire
Patent Counsel

Honorable George S. Kariotis
Secretary of Economic Affairs

Dr. Judith H. Obermayer
President
Obermayer Associates

Honorable Thomas P. O'Neill, III
Lieutenant Governor

Dr. Robert C. Seamans, Jr.
Henry R. Luce Professor of Public Policy
and Dean of Engineering, Emeritus
Massachusetts Institute of
Technology

Arthur M. Vash
Corporate Director

OFFICERS AND STAFF

William F. Aikman
President

Orie L. Dudley, Jr.
Secretary-Treasurer

Paul J. Ballantine
Senior Investment Analyst

Robert J. Crowley
Senior Financial Analyst

Robert J. Lepkowski
Investment Analyst

Edward J. Russell, Jr.
Public Information Officer

Gail M. Cormier
Administrative Assistant

Esther E. Larson
Office Manager

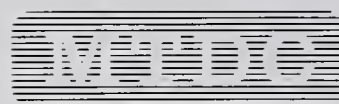
Marie B. Phaneuf
Secretary

Legal Counsel
Palmer & Dodge
Boston, Massachusetts

Auditors
Deloitte Haskins & Sells
Boston, Massachusetts

Accountants
Ayers & Sheehan
Boston, Massachusetts

Bankers
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